

I CLAIM:

1. A sewing machine comprising:

5 a sewing mechanism including a needle bar, a thread take-up lever and a shuttle;

a picker capable of holding a needle thread extending from an eye of a sewing needle near the shuttle located below a needle plate ; and

10 a picker driver driving the picker between a first stop position where the picker is capable of holding the needle thread and a second stop position spaced farther away from the shuttle than the first position,

wherein the picker is movable to a third position spaced farther away from the shuttle than the second position.

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2. A sewing machine according to claim 1, wherein the third position corresponds to a stop position of the picker in a case of replacement of a bobbin in the shuttle by another.

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3. A sewing machine according to claim 1, wherein the second stop position corresponds to a position where the picker is on standby while coming close to the shuttle and having releases the needle thread during sewing.

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4. A sewing machine according to claim 2, wherein the second stop position corresponds to a position where the picker is on standby while coming close to the shuttle and having released the needle thread during sewing.

5. A sewing machine according to claim 1, further comprising a cylindrical sewing bed in which the shuttle is housed, wherein the picker is disposed in the sewing bed so as to be nearer to a distal end of the bed than the shuttle, and the picker partially protrudes outward from the distal end of the bed when at the third stop position.

6. A sewing machine according to claim 1, further comprising a moving check preventing the picker from moving from the first or second stop position to the third stop position.

7. A sewing machine according to claim 6, further comprising an input device supplying a command signal for commanding movement of the picker from the first or second stop position to the third stop position, wherein the moving check prevents the picker from movement to the third stop position when the input device has supplied the command signal during sewing.

8. A sewing machine according to claim 6, further comprising a sewing bed in which the shuttle is housed, wherein the moving check includes a covering member attached to the bed so that the covering member is closed and opened, the covering member in a closed state abuts on the picker thereby to prevent the picker from movement to the third stop position, and the covering member in an open state allows the picker to move to the third stop position.

9. A sewing machine according to claim 8, wherein the picker

driver includes an actuator capable of driving the picker to the first stop position and a biasing unit biasing the picker in such a direction that the picker abuts on the covering member, and a biasing force of the biasing unit moves the picker to the third stop position when the covering member is open.

10. A sewing machine according to claim 8, wherein the picker driver includes an actuator capable of driving the picker to the first and second stop positions, a biasing unit biasing the picker in such a direction that the picker abuts on the covering member, and a biasing force of the biasing unit moves the picker to the third stop position when the covering member is open.

11. A sewing machine according to claim 1, wherein the picker driver includes a pulse motor capable of driving the picker to the first, second and third positions.

12. A sewing machine according to claim 11, further comprising a sewing bed in which the shuttle is housed and a covering member attached to the bed so that the covering member is closed and opened, wherein the covering member is opened when the picker driver moves the picker from the second stop position to the third stop position.

13. A sewing machine comprising:  
a sewing mechanism including a needle bar, a thread take-up lever and a shuttle;  
a picker capable of holding a needle thread extending from

an eye of a sewing needle near the shuttle located below a needle plate;

5 a picker driver driving the picker between a first stop position where the picker is capable of holding the needle thread and a second stop position spaced farther away from the shuttle than the first position, the picker being movable to a third position spaced farther away from the shuttle than the second stop position;

10 a moving check preventing the picker from movement from the first or second stop position to the third stop position, the moving check including a covering member r attached to the bed so that the covering member is closed and opened, the covering member in a closed state abutting on the picker thereby to prevent the picker from moving to the third stop position , the covering  
15 member in an open state allowing the picker to move to the third stop position,

wherein the picker driver includes an actuator capable of driving the picker to the first and second stop positions and a biasing unit biasing the picker in such a direction that the  
20 picker abuts on the covering member, and a biasing force of the biasing unit moves the picker to the third stop position when the covering member is open.

14. A picker control program for use in a sewing machine  
25 including a sewing mechanism including a needle bar, a thread take-up lever and a shuttle, a picker capable of holding a needle thread extending from an eye of a sewing needle near the shuttle located below a needle plate , a picker driver driving

the picker between a first stop position where the picker is capable of holding the needle thread and a second stop position spaced farther away from the shuttle than the first position, the picker being movable further to a third position spaced farther away from the shuttle than the second position, an input device supplied with a command signal for commanding movement of the picker from the first or second stop position to the third stop position, and a picker control device controlling the picker driver based on the command signal and including a computer executing the program, the program comprising a picker retreating routine in which the picker is retreated from the first or second stop position to the third stop position when the input device is supplied with the command signal.